



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,717	06/13/2001	Melvin A. Park	140-065	5524

7590 07/15/2003
Ward & Olivo
708 Third Avenue
New York, NY 10017

EXAMINER

BERMAN, JACK I

ART UNIT	PAPER NUMBER
----------	--------------

2881

DATE MAILED: 07/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/880,717	Applicant(s) PARK, MELVIN A.	
	Examiner Jack I. Berman	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-25 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-15, 26-32, 34-41 and 43-48 is/are rejected.
- 7) ☒ Claim(s) 10, 33 and 42 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4, 5</u> . | 6) <input type="checkbox"/> Other: |

Claims 33, 34, and 44 are objected to because of the following informalities: There is no antecedent basis for "said MALDI sample" in claims 33 and 34 or "said fragmented ions" in claim 44. Appropriate correction is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to claim 27, the ionization source of the mass spectrometer claimed in claim 26 "is selected from the group consisting of electrospray ionization source, nanospray ionization source, microspray ionization source, matrix assisted laser desorption/ionization, chemical ionization and electron ionization." However, according to claim 26, the ions are produced by irradiation of the sample with laser radiation. None of the ionization sources claimed in claim 27, except matrix assisted laser desorption/ionization, use laser irradiation to produce ions; therefore claim 27 contradicts parent claim 26. This contradiction makes claim 27 indefinite. The indefiniteness is such that it makes it impossible to compare the invention claimed in claim 27 impossible to compare to the prior art, so this claim has not been examined on the merits.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 11-15, 26, 28-32, 34-41, and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patents Numbers 6,040,575 and 5,652,427, both to Whitehouse et al. The '575 patent discloses a mass spectrometer comprising an ionization source, which can be Electron Ionization (EI), Chemical ionization (CI), Photon and Multiphoton Ionization, Fast Atom Bombardment (FAB), Laser Desorption (LD), Matrix Assisted Laser Desorption (MALDI), Thermospray (TS), sources as well as Atmospheric Pressure Ion (API) sources including Electrospray (ES), Atmospheric Pressure Chemical Ionization (APCI), Pyrolysis and Inductively Coupled Plasma (ICP) sources according to lines 23-30 in column 12, a multipole ion guide 8 that extends through multiple vacuum pumping stages 4, 5, a surface 12 that functions as a collision surface for ion fragmentation by Surface Induced Dissociation, as is described at lines 57-60 in column 12, and a Time of Flight mass analyzer. This mass spectrometer differs from that claimed in the instant application because a single multipole is used to guide the ions from the ionization source to the collision surface. The '427 patent teaches that when a multipole ion guide extends through multiple vacuum pumping stages, as in the system disclosed in the '575 patent, the background pressure over a portion of the ion guide causes collisional cooling of the ions while the guide guides and mass selects the ions. See the abstract. At lines 41-43 in column 21, the '427 patent further teaches that two or more multipoles arranged in consecutive vacuum pumping stages are functionally equivalent to a single multipole that extends through these vacuum pumping stages. The use of two or three multipoles arranged in series in the system of the '575 patent instead of the single multipole that extends through multiple vacuum pumping stages would therefore have been an obvious substitution of known equivalents. At lines 6-10 in column 14, the '575 patent teaches that collision induced dissociation (CID) may be

Art Unit: 2881

conducted in the ion guide and it would have been obvious to a person having ordinary skill in the art that conducting such CID in the final multipole, if multiple multipoles are used in the manner suggested by the '427 patent, would be functionally equivalent to conducting CID in the single ion guide disclosed in the '575 patent. At lines 33-37 in column 12, the '575 patent teaches that "Ions can be delivered to the Time-Of-Flight orthogonal pulsing region from several mass analyzer types including but not limited to multipole ion guides including quadrupoles, hexapoles or octopoles or combinations thereof..." Beginning at line 47 in column 13, the '575 patent teaches that application of appropriate voltage potentials to electrodes 11, 12, 13, and 14 determines whether the ions that pass through the multipoles strike the collision surface to undergo surface induced dissociation or pass by the collision surface without striking it. While the collision surface in the '575 system is parallel to the axis of the multipoles, it is note that 0^0 (i.e. the angle between two parallel surfaces) constitutes an angle as is claimed in claim 11 of the instant application. As is discussed above, the '575 patent teaches that both Laser Desorption and Matrix Assisted Laser Desorption/Ionization, both of which comprise a laser for irradiating a sample to produce ions, are suitable ionization sources for the disclosed mass spectrometer.

Claims 16-25 are allowed.

Claims 10, 33, and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

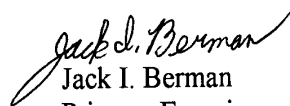
The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach to provide the collision surface of a mass spectrometer that comprises SID between two multipoles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack I. Berman whose telephone number is (703) 308-4849. The examiner can normally be reached on M-F (8:30-6:00) with every second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Jack I. Berman
Primary Examiner
Art Unit 2881

jb
July 8, 2003